IN THE CLAIMS

The following is a complete listing of the claims, and replaces all earlier version and listings.

1. (previously presented): A method for performing an Inverse Discrete Wavelet Transform (IDWT) comprising, for a first sub-band level and a second sub-band level in an N level Discrete Wavelet Transform, the steps of:

(i) processing, as soon as a first computation block is filled with sets of data points from corresponding sub-bands of the first sub-band level, those sets of data points from corresponding sub-bands of the first sub-band level, to form a set of processed data points in a sub-band of the second sub-band level; and

(ii) processing, as soon as a second computation block is filled with the set of processed data points in the sub-band of the second sub-band level in conjunction with at least one set of data points from a corresponding at least one sub-band of the second sub-band level, that set of processed data points in the sub-band of the second sub-band level in conjunction with the at least one set of data points from said corresponding at least one sub-band of the second sub-band level, to form a set of processed data points in a sub-band of a subsequent sub-band level,

wherein each said set of data points is smaller than the number of data points in a corresponding sub-band level.

2. (currently amended): A method according to claim 1,

wherein the processing in the steps (i) and (ii) is performed using respective sets of first filters and second filters, the first filters and the second filters being fixed and of equal width,

wherein the second filters are effected by one set of dedicated filters in regard to processing of sub-band level 1, and

wherein the first filters and second filters are effected by time sharing one set of filters ~~in regard to processing of sub-band levels N to 2, wherein N = 1,~~ among all remaining sub-band levels, that one set of filters being applied to a single sub-band level of the remaining sub-band levels ~~N to 2~~ at a time~~, and~~

~~wherein the second filters are effected by one set of dedicated filters in regard to processing of sub-band level 1~~.

3. (currently amended): A method according to claim 2, wherein the time sharing is performed using a time multiplexer which multiplexes data from the remaining sub-band levels ~~N to 2, wherein N = 1,~~ to the time shared set of filters.

4. (currently amended): A method according to claim 2, wherein data associated with sub-bands of one of [[said]] the remaining sub-band levels ~~N to 2, wherein N = 1,~~ is stored while the set of time shared filters is being applied to sub-bands of another one of [[said]] the remaining sub-band levels ~~N to 2~~.

5. (previously presented): A method according to any one of claims 1 to 4, wherein the first filters and the second filters are N dimensional separable IDWT transformers.

6. (previously presented): A method for performing an Inverse Discrete Wavelet Transform IDWT in relation to a 2-dimensional N level Discrete Wavelet Transform, said method comprising steps of:

(i) processing, as soon as a first computation block is filled with sets of M x M data points from corresponding sub-bands of a first sub-band level, those sets of M x M data points from corresponding sub-bands of a first sub-band level, to form a set of M x M processed data points in a sub-band of a second sub-band level; and

(ii) processing, as soon as a second computation block is filled with the set of M x M processed data points in the sub-band of the second sub-band level in conjunction with sets of M x M data points from corresponding sub-bands of the second sub-band level, the set of M x M processed data points in the sub-band of the second sub-band level in conjunction with sets of M x M data points from corresponding sub-bands of the second sub-band level to form a set of M x M processed data points in a sub-band of a subsequent sub-band level,

wherein each said set of M x M data points is smaller than the number of data points in a corresponding sub-band level.

7. (previously presented): An apparatus for performing an Inverse Discrete Wavelet Transform IDWT comprising, for a first sub-band level and a second sub-band level in an N level Discrete Wavelet Transform:

(i) means for processing, as soon as a first computation block is filled with sets of data points from corresponding sub-bands of the first sub-band level, those sets of data points from corresponding sub-bands of the first sub-band level, to form a set of processed data points in a sub-band of the second sub-band level; and

(ii) means for processing, as soon as second computational block is filled with the set of processed data points in the sub-band of the second sub-band level in conjunction with at least one set of data points from a corresponding at least one sub-band of the second sub-band level, the set of processed data points in the sub-band of the second sub-band level in conjunction with at least one set of data points from a corresponding at least one sub-band of the second sub-band level, to form a set of processed data points in a sub-band of a subsequent sub-band level,

wherein each said set of data points is smaller than the number of data points in a corresponding sub-band level.

8. (currently amended): An apparatus according to claim 7, wherein;

said means for processing in the paragraphs (i) and (ii) comprise respective first filters and second filters, said first filters and second filters being fixed and of equal width, and wherein said apparatus further comprises:

one set of filters for time sharing;

one set of dedicated filters for effecting, in regard to processing of sub-band level 1, said second filters; and

means for time sharing, ~~in regard to processing the sub-band levels N to 2~~ among all remaining sub-band levels, ~~wherein N = 1,~~ said one set of filters to effect said first filters and said second filters, said one set of filters being applied to a single sub-band level of the remaining sub-band levels ~~N to 2~~ at a time~~; and~~

~~one set of dedicated filters for effecting, in regard to processing of sub-band level 1, said second filters~~.

9. (currently amended): An apparatus according to claim 8, further comprising:

a time multiplexer which multiplexes data from the remaining sub-band levels ~~N to 2, wherein N = 1,~~ to the time shared set of filters.

10. (currently amended): An apparatus according to claim 8, further comprising:

storage means for storing data associated with sub-bands of one of [[said]] the remaining sub-band levels ~~N to 2, wherein N = 1,~~ while the set of time shared filters is being applied to sub-bands of another one of [[said]] the remaining sub-band levels ~~N to 2~~.

11. (previously presented): An apparatus according to any one of claims 7 to 10 wherein said first filters and said second filters are N dimensional separable Inverse Discrete Wavelet Transform IDWT transformers.

12 (currently amended): An apparatus for performing an Inverse Discrete Wavelet Transform IDWT in relation to a 2-dimensional N level Discrete Wavelet Transform, said apparatus comprising: [[;]]

(i) means for processing, as soon as a first computational block is filled with sets of M x M data points from corresponding sub-bands of a first sub-band level, those sets of M x M data points from corresponding sub-bands of a first sub-band level, to form a set of M x M processed data points in a sub-band of a second sub-band level; and

(ii) means for processing, as soon as a second computational block is filled with the set of M x M processed data points in the sub-band of the second sub-band level in conjunction with sets of M x M data points from corresponding sub-bands of the second sub-band level, the set of M x M processed data points in the sub-band of the second sub-band level in conjunction with sets of M x M data points from corresponding sub-bands of the second sub-band level, to form a set of M x M processed data points in a sub-band of a subsequent sub-band level,

wherein each said set of M x M data points is smaller than the number of data points in a corresponding sub-band level.

13. (previously presented): A computer readable memory medium storing a program for performing an Inverse Discrete Wavelet Transform IDWT, said program comprising in relation to a first sub-band level and an N level Discrete Wavelet Transform:

(i) code for processing, as soon as a first computational block is filled with sets of data points from corresponding sub-bands of the first sub-band level, those sets

of data points from corresponding sub-bands of the first sub-band level, to form a set of processed data points in a sub-band of the second sub-band level; and

(ii) code for processing, as soon as a second computational block is filled with the set of processed data points in the sub-band of the second sub-band level in conjunction with at least one set of data points from a corresponding at least one sub-band of the second sub-band level, the set of processed data points in the sub-band of the second sub-band level in conjunction with at least one set of data points from a corresponding at least one sub-band of the second band level, to form a set of processed data points in a sub-band of a subsequent sub-band level,

wherein each said set of data points is smaller than the number of data points in a corresponding sub-band level.

14. (previously presented): A computer readable memory medium storing a program for performing an Inverse Discrete Wavelet Transform IDWT in relation to a 2-dimensional N level Discrete Wavelet Transform, said program comprising:

(i) code for processing, as soon as a first computational block is filled with sets of M x M data points from corresponding sub-bands of a first sub-band level, those sets of M x M data points from corresponding sub-bands of a first sub-band level, to form a set of M x M processed data points in a sub-band of a second sub-band level; and

(ii) code for processing, as soon as a second computational block is filled with the set of M x M processed data points in the sub-band of the second sub-band level in conjunction with sets of M x M data points from corresponding sub-bands of the second sub-band level, the set of M x M processed data points in the sub-band of the

second sub-band level in conjunction with sets of M x M data points from corresponding sub-bands of the second sub-band level, to form a set of M x M processed data points in a sub-band of a subsequent sub-band level,

wherein each said set of M x M data point is smaller than the number of data points in a corresponding sub-band level.

15.-17. (cancelled)

18. (previously presented): A method according to claim 1, wherein the set of processed data points in the sub-band of the second sub-band level are formed before all data points in the sub-bands of the first sub-band level are processed.

19. (previously presented): A method according to claim 1, wherein said step (ii) commences before all data points in the sub-bands of the first sub-band level are processed.

20. (previously presented): A method according to claim 6, wherein the set of processed M x M data points in the sub-band of the second sub-band level are formed before all data points in the sub-bands of the first sub-band level are processed.

21. (previously presented): A method according to claim 6, wherein said step (ii) commences before all data points in the sub-bands of the first sub-band level are processed.

22. and 23. (cancelled).